

VGA/HDMI over HDBaseT Extender Set with Ethernet | IR | Serial | 2-way PoH (100m/328ft)

EX-SW-0201-4K

WyreStorm

Quickstart Guide

A full-featured 5-Play HDBaseT extender set with the added feature of a VGA/HDMI auto-switching transmitter.

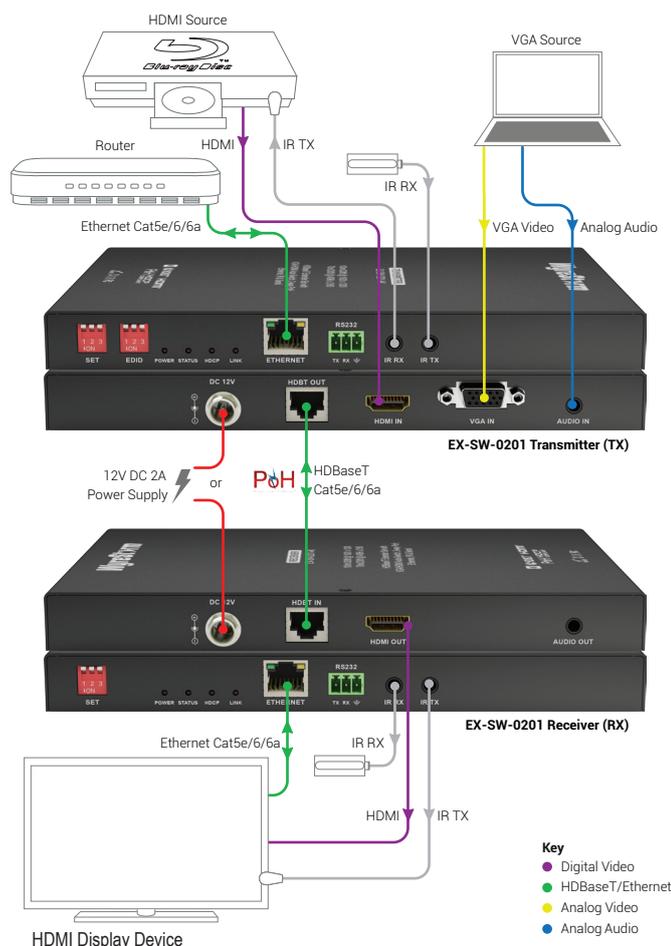
! WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.



In the Box

- 1x EX-SW-0201-4K Transmitter
- 1x EX-SW-0201-4K Receiver
- 1x 12V DC 2A Power Supply (US/UK/EU)
- 2 x 3-pin Screw Down Phoenix Connectors
- 2x IR Emitters
- 2x Wide-band IR Receivers (30-50KHz)
- 4x Mounting Brackets (1pr for TX and 1pr for RX)
- 1x Quickstart Guide (this document)

Basic Wiring Diagram



! **IMPORTANT!** Disconnecting and connecting (hot plugging) HDMI or HDBaseT while devices are powered on may cause damage. WyreStorm recommends powering off devices before disconnecting these connections.

Additional Information

This Quickstart Guide provides the basic steps for the common uses of this product. Refer to the Installation Guide and other documentation on the product page for additional information.

Installation

Before Beginning

Verify that all items are included in the packaging per the **In The Box** list.

Pre Wire

1. Run a Cat5e/6/6a cable from the transmitter location to the receiver location. Terminate the cable per the **HDBaseT Wiring** section.
2. (Optional) If using 3rd party IR emitters or connecting blocks at either the transmitter or receiver, run the wire and terminate per the **IR TX (Emitter) Wiring** section.
3. (Optional) If using RS-232 pass-through, run the wire and terminate per the **RS-232 Wiring** section.
4. (Optional) If using 3rd party IR receivers at either the transmitter or receiver, run the wire and terminate per the **IR RX (Receiver) Wiring** section.

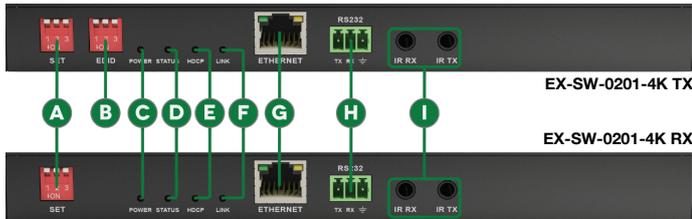
Transmitter Installation

1. Connect an HDMI source to the **HDMI In** on the transmitter using an HDMI cable from a high quality brand such as **WyreStorm Express**.
2. (Optional) Connect the VGA Out from a VGA source to the **VGA In**. Connect the audio out for the VGA source to the Audio In using a cable terminated per the **Audio In/Out Wiring** section.
3. (Optional) Place an IR emitter onto the source device near the device's IR receiver and connect it the **IR TX** port.
4. Connect the cable created in **Pre Wire** step 1 to the **HDBT Out**.
5. (Optional) Connect the 3-pin connector to the **RS-232** port on the transmitter and the opposite end to a port on a control system.
6. If using PoH from the transmitter to power the receiver, connect the included 12V DC 2A power supply to the **DC 12V** jack.

Receiver Installation

1. Connect the HDMI Out on the receiver to an input on the display using an HDMI cable from a high quality brand such as **WyreStorm Express**.
2. (Optional) Place an IR emitter onto the source device near the device's IR receiver and connect it the **IR TX** port.
3. Connect the cable created in **Pre Wire** step 1 to the **HDBT In**.
4. (Optional) If using RS-232 pass-through, connect the 3-pin connector to the **RS-232** port on the receiver and the opposite end to a port on the device being controlled.
5. If using PoH from the receiver to power the transmitter, connect the included 12V DC 2A power supply to the **DC 12V** jack.

Front Panel (TX/RX)



- A Set**

3 Position Dipswitch:
Used to enables/disable long cable mode, configure RS-232 port, and configure USB mode. See [RS-232 and Distance Settings](#)
- B EDID Settings (TX Only)**

3 Position Dipswitch:
Used to set EDIDs to correct resolution conflicts between the source and the display. See [EDID Settings](#).
- C Power LED**

Solid: The transmitter is powered On
Off: The transmitter is powered Off
- D Status LED**

Flashing: The transmitter is operating normally.
Off: The transmitter is Not operating normally.
- E HDCP LED**

Solid: Audio and Video signal is HDCP protected.
Flashing: Audio and Video signal is not HDCP protected.
Off: No Audio and Video signal.
- F Link LED**

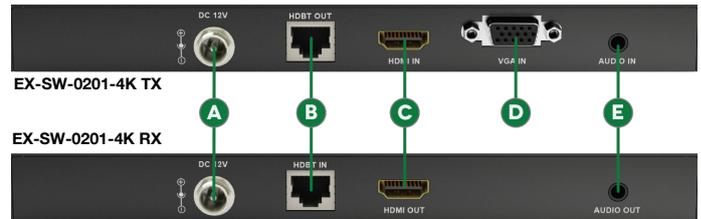
Solid: Link to receiver has been established.
Flashing: Link to receiver has not been established.
- G Ethernet**

8-pin RJ-45 female | 10/100 Mbps auto-negotiating
Connect to a Local Area Network or network device for Ethernet pass-through over HDBaseT.
- H RS-232**

3-pin Screw Down Phoenix Connector
Used to send and receive RS-232 signals to/from the source location via HDBaseT and firmware updates. See [RS-232 Wiring](#).
- I IR RX/TX**

3.5mm (1/8in) Mono Plug
IR TX: Connect to the supplied IR emitter.
IR RX: Connect to the supplied IR receiver.
See [IR Wiring](#).

Rear Panel (TX/RX)



- A Power In**

5.5mm Male Barrel Jack
Connect to the included 12V DC 2A power supply. Only connect to either the transmitter or receiver when using PoH.
- B HDBT Out (TX)
HDBT In (RX)**

8-pin RJ-45 female
Connect the transmitter **HDBT Out** to receiver **HDBT In** using the cable created in [Pre Wire](#) step 1.
- C HDMI In (TX)
HDMI Out (RX)**

19-pin type A HDMI female digital video/audio: Supports HDMI and DVI/D (requires adapter-not included). Limited to 297MHz pixel clock
- D VGA In (TX Only)**

15-pin VGA VESA (D-SUB 15):
Connect to D-SUB 15 VGA output of a device such as a computer.
15-pin VGA cable is required.
- E Audio In (TX)
Audio Out (RX)**

3.5mm (1/8in) Stereo Jack
In: Connect to the analog audio output of a device to send audio over HDBaseT.
Out: Connect to an analog audio input of a device to play audio received over HDBaseT.

HDBaseT Wiring



IMPORTANT! Wiring Guidelines

- 4K UHD resolutions require more bandwidth than 1080p, for this reason Wyrestorm recommends using Cat6 or higher to ensure proper 4K UHD transmission.
- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference can have an adverse effect on HDMI and HDBaseT transmission limiting performance.
- If a patch panel is being used, Cat6a or higher cable must be used from the matrix to the receiver as well as inside the panel to avoid loss of signal.
- While similar in nature, the HDBaseT protocol is different than Ethernet and voltages provided for PoH can be higher than those provided by PoE. For this reason, never connect an HDBaseT link to an Ethernet router or switch to avoid damaging the connected devices.

Wiring for HDBaseT follows the EIA T568B standard.



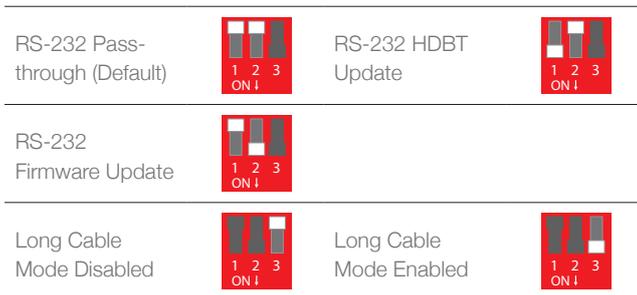
Resolution Distances

The type of category cable used and the distance between the matrix and receiver can restrict the available video resolution. Refer to **Video Resolutions** in the **Specifications** table for the max distance based on resolution.

RS-232 and Distance Settings

The Set dip-switches on the front panel on the TX and RX configure RS-232 mode and Long Cable Mode.

- Long Cable mode change must be made on both the TX and RX.
- Switches that are grayed out in the images can be in any position for the desired function.



IR Wiring

IR TX (Emitter) Wiring

Connection for IR TX (transmit) uses a 3.5mm (1/8in) mono plug.



IR RX (Receiver) Wiring

Connection for IR RX (receive) uses a 3.5mm (1/8in) stereo jack that outputs +5V DC to power the included IR receiver.

IMPORTANT! 3rd party IR receivers may require a different voltage, refer to the documentation provided with the IR receiver before making any connections to avoid damaging the device.

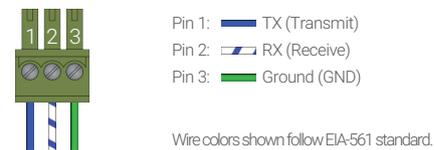


RS-232 Wiring

RS-232 Connection Guidelines

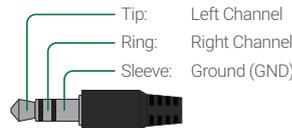
The following wiring diagram shows the pinouts for the extender set. While not shown, connect the TX (transmit) to RX (receive) pins at the control system or PC side of the cable.

Most control systems and computers are DTE where pin 2 is RX, this can vary from device to device. Refer to the documentation for the connected device for pin functionality to ensure that the correct connections can be made.



Audio In/Out Wiring

Connection for Line In/Out uses a 3.5mm (1/8in) stereo jack.



EDID Settings

The **EDID** dip-switches located on the TX can be configured to resolve issues with video output on displays that may not accept the maximum resolution available from the source.



Specifications

Audio and Video		
Inputs	Transmitter 1x HDMI 19-pin type A 1x Audio In 3.5mm (1/8in) Stereo Jack 1x HDBT 8-pin RJ-45 female	
	1x HDMI 19-pin type A 1x Audio Out 3.5mm (1/8in) Stereo Jack 1x HDBT 8-pin RJ-45 female	
	2ch PCM Up to 7.1 DTS-X and Dolby Atmos	
Audio Formats		
Video Resolution (Max)	HDMI 1920x1080 @60Hz 48bit (15m/50ft) 4096x2160p @60Hz 24bit 4:2:0 (7m/23ft) Using Cat5/5e 1920x1080 @60Hz 36bit (100m/328ft) 1920x1080 @60Hz 3D 36bit (100m/328ft) Using Cat6/6a 1920x1080 @60Hz 36bit (150m/492ft) 1920x1080 @60Hz 3D 36bit (150m/492ft) 3840x2160p @24/25/30Hz 4:4:4 24bit (100m/328ft) 4096x2160p @60Hz 4:2:0 24bit (100m/328ft)	
	Color Depth	1080p: 48bit 4K UHD: 24bit
	Maximum Pixel Clock	297 MHz
	Communication and Control	
	HDMI	HDCP 2.2 EDID DVI/D supported with adapter (not included)
	HDBaseT	HDCP 2.2 EDID PoH (2-way) Bidirectional IR and RS-232
Ethernet	1x 8-pin RJ-45 female 10/100 Mbps auto-negotiating	
IR	1x IR TX 3.5mm (1/8in) Mono 1x IR RX 3.5mm (1/8in) Stereo Bidirectional over HDBaseT	
RS-232	1x 3-pin Screw Down Phoenix Connector Bidirectional over HDBaseT	

Warranty Information

This product is covered by a 2 year limited parts and labor warranty. During this period there will be no charge for unit repair, component replacement or complete product replacement in the event of malfunction. The decision to repair or replace will be made by the manufacturer. This limited warranty only covers defects in materials or workmanship and excludes normal wear and tear or cosmetic damage.

Visit the product page located at wyrestorm.com for additional information on this product including important technical information not provided in this document and warranty terms & conditions.

Power	
Power Supply	Input: 100~240V AC 50/60Hz Output: 12V DC 2A
Max Power Consumption	26.5W
PoH (2-way)	48V 15.4W
Environmental	
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C) 10% ~ 90%, non-condensing
Storage Temperature	-4°F ~ 140°F (-20°C ~ 70°C) 10% ~ 90%, non-condensing
Dimensions and Weight	
Height	20mm/0.79in
Width	200mm/7.87in
Depth	134mm/5.28in
Weight	0.6kg/1.32lbs
Regulatory	
Safety and Emission	CE FCC

Troubleshooting

No or Poor Quality Picture (snow or noisy image)

- Verify that power is connected to the transmitter and receiving device. If using a display with a built in receiver, verify that the device is powered on.

Note: When using PoH, to power the transmitter, verify that the HDBaseT cable is properly terminated per the [HDBaseT Wiring](#) section.

- Verify that the transmitter supports the output resolution of the source. See [Supported Video Resolutions](#).
- Verify that the receiving device and display support the output resolution of the source. Configure EDID Settings to a lower resolution. If transmitting 3D or 4K, verify that the HDMI cables used are 3D or 4K rated.
- Verify that the HDBaseT cable is properly terminated per the [HDBaseT Wiring](#) section.
- Verify that all source and HDBaseT connections are not loose and are functioning properly.

No or Intermittent 3rd party Device Control

- Verify that the IR cable(s) is properly terminated. See [IR Wiring](#)
- Verify that the IR emitter is located near the IR receiver on the device.

Troubleshooting Tips:

- WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.
- Use a flashlight to locate the IR receiver behind any tinted panels on the device being control.

